THE MINERAL INDUSTRIES OF THE SOUTHERN BALKANS

ALBANIA, BOSNIA AND HERZEGOVINA, CROATIA, MACEDONIA, SERBIA AND MONTENEGRO, AND SLOVENIA

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Europe's Adriatic Balkan region is part of the southern portion of the Mediterranean Alpine folded zone, which extends through the Dinarides of the former Yugoslavia (Bosnia and Herzegovina, Croatia, Macedonia, Serbia and Montenegro, and Slovenia), the Albanides of Albania, and the Hellenides of Greece. Mining for base and precious metals may be traced through historical records to at least 5th century B.C. Evidence of early workings at the Bor copper deposit in Serbia suggests prehistoric origins.

Mineral deposits in the region became well defined during the second half of the 20th century. Commercial resources of major base metals included those of aluminum, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, and zinc. Such precious metals as gold, palladium, platinum, and silver were found mainly in association with such base metals as copper, lead, and zinc. Industrial minerals included clays and volcanic materials and a broad range of carbonate and silicate rocks, gravels, and sands. Mineral fuels comprised coal (lignite), natural gas, and petroleum.

Until the early 1990s, the mining, processing, and downstream use of base metals established the region as a major European source of copper, lead, and zinc and a major world producer of chromite. The transition of the region from central economic planning to market economy systems between 1991 and 2001 also began a swift deconstruction of existing political and social structures. The ensuing political, social, and ethnic tensions and conflict destroyed or degraded much of the region's mineral industries and industrial infrastructure. In 2004, political and social tensions in the Province of Kosovo in Serbia and Montenegro and in Macedonia continued to abate, which created better conditions for capital investment.

The future status of the mineral industries in the countries of the Adriatic Balkan region would be clarified following political settlement and normalization not only among the states in the region, but also within these states, especially Bosnia and Herzegovina, Croatia, Macedonia, and Serbia and Montenegro.

ALBANIA

In 2004, Albania's gross domestic product (GDP) based on purchasing power parity increased by about 7.3% compared with that of 2003. Industry represented about 10% of the GDP. Industrial production amounted to about 10% of the GDP; this was in contrast to 14% in 2003. Generally, the output of Albania's industry, including that of the minerals sector, diminished in 2004; the service sector as a percentage of the GDP increased to 46% in 2004 compared with 25% in 2003 (Institute of Statistics of Albania, 2005, p. 29).

Mineral deposits that usually have been associated with Albania included such metalliferous mineral commodities as chromite, copper ore, nickeliferous iron ore and such mineral fuels as natural gas and petroleum. Of the metal ores, only chromite and a token amount of bauxite were mined in 2004. In past decades, Albania was among the world's top three producers and exporters of chromite. Although Albania's chromite output remained insubstantial compared with routine production levels reached during the 1960s through the late 1980s, the output of marketable chromite (concentrate and direct shipping ore) increased significantly by about 67% in 2004 compared with that of 2003. The output of ferrochromium declined by about 8% compared with that of 2003 (table 1).

Many of the country's remaining mineral-producing enterprises were under foreign operational management. In the metals sector, these enterprises included the ferrochromium plant at Burrel and Elbasan (Darfo S.p.A. of Italy) and the Munelle and other copper mines (Ber-Oner Madencilik San ve Tic As of Turkey).

Dolomite, gypsum, marble, phosphate rock, and other industrial minerals have been worked only intermittently during the past several years; only dolomite, however, is listed in table 1. Major activities in the industrial minerals sector in 2004 included an investment project by the International Finance Corporation worth $130 million for modernization and facility expansion of the Fushe Kruje Cement Plant that would include a new 1.3-million-metric-ton-per-year (Mt/yr) production line. The Seament Holding Group of Lebanon, which was the owner of the Elbasan and Fushe Kruje cement plants, was the sponsor of the project (International Finance Corporation, 2004).

The production of natural gas, petroleum coke, and petroleum increased by 7%, 3%, and 2%, respectively, compared with output levels in 2003 (table 1). Activities in the mineral fuels sector included Banker Petroleum Ltd. of Canada's exploration for oil and gas and the development of new wells at the Marinze and the Patos oilfields. In 2004, Banker Petroleum put 37 wells into production and ordered equipment for 20 wells for early 2005 (Banker Petroleum Ltd., 2004).

Outlook

The development of Albania's mineral industry is contingent on such factors as the stability of social institutions, the creation of modern infrastructure, and the adoption of legislation that would attract foreign investment. International financial institutions have continued to assist Albania in achieving these objectives.

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BOSNIA AND HERZEGOVINA

Bosnia and Herzegovina continued to comprise two constituent regions, the Federation of Bosnian Moslems and Croatians (FBC) and Republika Sprska (RS), which accounted for about 51% and 49% of Bosnia and Herzegovina's territory, respectively. This organization, which was an outcome of a series of compromises that led to peace accords between conflicted factions in the 1990s, has not changed substantially in recent years.

Bosnia and Herzegovina's mineral resources included bauxite, coal, industrial minerals, iron ore, lead, and zinc. These resources and their mining and processing facilities, however, were exploited in the FBC and RS.

In 2004, Bosnia and Herzegovina's GDP based on purchasing power parity showed an overall increase of about 6.3% compared with that of 2003 (International Monetary Fund, 2005§[1]). The FBC's share of Bosnia and Herzegovina's GDP, which amounted to about 67% of the total, showed growth of about 5.1% compared with that of 2003.

The GDP of the RS increased by about 6% compared with that of 2003 (International Monetary Fund, 2005, p. 42). Foreign investor interest in the country's minerals sectors appeared to have increased especially in those sectors involved with iron and steel and nonferrous metals.

In 2004, industrial production in the FBC increased (value basis) by more than 13% compared with that of 2003. The value of mining output represented about 3% of the value of the FBC's GDP. The mining sector as a whole, however, increased the value of output by about 5.8% compared with that of 2003. The mine output of metal ores, industrial minerals, and coal and peat increased by 53.8%, 15%, and 3.9%, respectively, compared with production levels in 2003. Manufacturing output registered a rise of 14.5% compared with that of 2003. In the field of mineral processing, the FBC reported a slight (0.3%) increase in the production of metals and more than 10% in the output of processed nonmetallic and industrial minerals. The production of refined petroleum products in the FBC registered a significant increase in 2003 and 2004 (Federation of Bosnia and Herzegovina Federal Office of Statistics, 2004, p. 42). The FBC's exploitable mineral resources included coal, bauxite, gypsum, lead and zinc, magnesite, and rock salt. Data that was available for the FBC for 2004 showed the production of lignite and brown coal to have increased by about 6% and 3%, respectively. The FBC's production of salt increased by about 11% compared with that of 2003; the output of lime, cement, and gypsum increased by about 80%, 17%, and 14%, respectively. The FBC also operated the country's only aluminum and steel plants. The FBC's production of aluminum and steel ingots amounted to 121,294 metric tons (t) and 117,170 t, respectively, which represented a production increase of aluminum of about 8% and a shortfall of steel output of about 30%, compared with respective production levels in 2003.

In 2004, major issues that continued to hinder full privatization of aluminum producer, Aluminij d.d. Mostar (Mostar) centered on assurances of reliable energy supplies and solutions bearing on issues related to prewar labor claims and rights (Aluminij d.d.Mostar, 2005).

BH-Steel Zeljezara Ltd. (B-H Steel), which also was located in the FBC, and, which suffered little damage during the Yugoslav conflict in the 1990s, launched new facility expansion and privatization programs in the first half of 2004. Installation of a new 100-metric-ton Danieli electric arc furnace (EAF) began in March and startup trials were scheduled for November. The EAF, with a design capacity of about 700,000 metric tons per year (t/yr), was expected to produce about 400,000 t/yr of crude steel during its initial year of operation; full operations were to begin in 2006. About one-half of the plant's crude steel output would be earmarked for domestic consumption; the balance would be exported to neighboring countries (Metal Bulletin, 2004a). In addition to the EAF, a new 54-strand billet caster was added to B-H Steel's meltshop. Further planned investment included the addition of a four-strand continuous caster for larger sized billets, a reheating furnace, and a bar mill. The total value of new and planned investment would amount to about $68 million; the funds were to be secured from West LB bank of Germany (Metal Bulletin, 2004b). The production profile of B-H Steel included reinforcing bar and mesh-quality wire rod, which corresponded well with the needs of a rapidly developing infrastructure program. This program included the modernization of four thermal power stations with financial assistance from the European Union and the reconstruction and repair of roads and railroads that connected the country's ports and commercial hubs with financial assistance from the European Bank for Reconstruction and Development (Rivutso, 2004).

Although B-H Steel continued to operate as a joint venture between the Government of the FBC and Kuwait Consulting & Investment Co. at the beginning of the year, a process to privatize B-H Steel fully began in June; this process involved talks between the joint-venture partners and LNM Holdings N.V. of the United Kingdom (Metal Bulletin, 2004d). LNM, which merged with the

[1]References that include a section mark (§) are found in the Internet Reference Cited sections.

Ispat Group of India in the latter part of the year to form Mittal Steel Company Ltd., signed a letter of agreement in July to purchase controlling shares in B-H Steel (Metal Bulletin, 2004e). LNM's formal acquisition, which was completed in August, gave LNM 51% of B-H Steel's shares. The acquisition agreement called for LNM to increase the share capital in B-H Steel by $80 million and to invest in a capital expenditure program during a 10-year period, which would be valued at no less than $135 million. Kuwait Consulting & Investment and the Government of Bosnia and Herzegovina were to retain 41% and 8% of the shares of B-H Steel stock, respectively (LNM Holdings N.V., 2004b).

The FBC's industrial minerals sector showed a rebound in production during the year as lime, cement, gypsum and salt showed production gains of 80%, 17%, 14%, and 11%, respectively compared those of 2003. In the mineral fuels sector, the output of brown coal and lignite increased by about 4% compared with that of 2003.

In 2004, industrial output in RS, in terms of volume, increased by 9.7% compared with that of 2003. The value of output in the mining and quarrying sector increased by about 38% compared with that of 2003. The production of metal ores increased (from a low base) by about 256% compared with that of 2003; industrial minerals rose by 17.5%. The production of mineral fuels, however, which included coal, lignite, and peat, declined by about 7% compared with that of 2003 (Republika Srpska, 2004).

At yearend, Mittal acquired a majority stock share holding in the Ljubija iron ore mine in the RS (LNM Holdings N.V., 2004a; Metal Bulletin, 2004c). The Ljubija Mine incorporates several deposits of iron ore, which have been mined since the early 1900s. Reserves exceeded 52 million metric tons (Mt) and were sufficient to last 35 years at an output of about 1.5 Mt/yr. Initially, iron ore production, which was to begin in 2005, would be shipped to Mittal's steelmaking operations in Central Europe. Following the restoration of the coking battery, sinter plant, and blast furnace at B-H Steel, Mittal planned to use Ljubija ore as feedstock at the steel mill in the FBC (Jones, 2004). This should reestablish the direct linkage between the mine and the steel mill that existed prior to the dissolution of the former Yugoslavia.

RS bauxite producer Boksit Milici invested about $3.4 million for new transport equipment and mining machinery, exploration for new bauxite resources, and infrastructure development. The Milici Mine, which restarted production in 2002 after a hiatus of almost 3 years, was the major supplier of bauxite to the Birac Alumina refinery (Metals Insider, 2004b).

RS-based Birac Alumina refinery was restarted at yearend 2003 following an agreement that was reached between the Birac management and Samsung UK Ltd., which called for purchases of the majority of Birac's alumina production in 2004 (Metal Bulletin, 2003). Plans by Ukio Banko Investicine Grupe, which was Birac's owner, included an increase in output by about 70% to about 540,000 t of alumina in 2005. Additional investments would raise output capacity to 750,000 t/yr from 600,000 t/yr (Metals Insider, 2004a).

Apart from calcined alumina production, in 2004, the Birac alumina refinery also produced about 12,000 t of zeolite; planned upgrades would eventually raise zeolite production to about 48,000 t/yr (FIPA Times Newsletter, 2005).

Outlook

The country's slow return to normalcy has become more evident as foreign investors appear to transect territorial boundaries and reestablish production in mineral industries and their linkages to former commercial partners, which were terminated during the civil strife of the mid-1990s.

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CROATIA

Petroleum extraction and refining sectors occupied the leading roles in Croatia's mineral industry. The mining and processing of industrial minerals and metals had a lesser role in meeting the country's consumption needs.

In 2004, Croatia's gross domestic product based on purchasing power parity grew at a rate of 5.8% compared with that of 2003; the volume of total industrial production rose by 3.7% (Crostat, 2005, p. 6; International Monetary Fund, 2005§). Natural gas production increased slightly (by about 1%) compared with that of 2003. Petroleum production continued to decline with a shortfall of about 4%. Exports by Croatia's mining and quarrying sector increased by 31% compared with those in 2003. Similarly, imports of nonfuel minerals increased by about 30% compared with those of 2003 (Crostat, 2005, p. 67-68). INA-Industrija Nafte d.d. Zagreb (INA) was Croatia's state-owned natural gas and petroleum exploration and production company. In 2004, INA, which operated the Rijeka, the Sisak, and the Zagreb refineries, awarded a $3.8 million contract to Honeywell International Inc. of the United States to automate and modernize the powerplant and refinery at the Rijeka refinery. The Rijeka refinery's streamlining would result in greater monitoring and control efficiency of the powerplant and the fluid catalytic cracking unit (Oil & Gas Journal, 2004). The completion of the modernization program at Rijeka was scheduled for 2006. Modernization of the Sisak refinery, which included facility expansion and the upgrading of the catalytic reforming unit and gas oil hydrodesulfurization (HDS) within the refinery, was scheduled for completion in 2008. Total outlays for both investment projects would amount to $600 million (INA-Industrija Nafte d.d., 2004).

The production of secondary aluminum rebounded; output increased by almost five times. Crude steel production, however, remained at about the output level of 2003 and was well below the combined total steelmaking capacity of SP MK Zeljezare Sisak d.d. and Jadranska Zelejzara Split of about 245,000 metric tons per year (t/yr). Major activities in the iron and steel sector included the decision by the Government to issue a privatization tender for Jadranska Zelejzara. The tender, which was issued in midyear, offered up to 89% of the steel mill's stock shares for sale. Conditions for investors in Jadranska Zelejzara included the assumption of a $14 million debt and the servicing of all guarantees provided by the Government, which increased the amount of funds needed to cover all liabilities considerably (Metal Bulletin, 2004a, b). The privatization of SP MK Zeljezara Sisak d.d., which was implemented through the plant's purchase by Russia's Chelyabinsk-based Mechel Steel Group in early 2003, was reversed in 2004. This outcome followed Mechel's decision not to accept the demands of the Government to maintain full employment at the facility and to allocate no less than 30% of Zeljezara Sisak's ouput for the domestic market (Reuters, 2003; Kommersant, 2004).

Most of Croatia's output of industrial minerals was consumed in the domestic market. In 2004, cement production rose by 4.3% compared with that of 2003; bentonite production rose substantially by about 18%. Other commodities associated with construction materials production showed mixed results. The production of ceramic clays increased 3.4 times; the output of crude gypsum declined by about 10%, and that of pumice, by 21%.

Outlook

The extraction and processing of hydrocarbons are expected to remain the principal elements of Croatia's mineral industries. Steel and industrial minerals designated for construction, however, may see increases of production in the future as infrastructure development begins to increase. The International Bank for Reconstruction and Development in conjunction with the International Finance Corporation chose Croatia as a priority market in Southern Europe for investment in infrastructure (International Bank for Reconstruction and Development and International Finance Corporation, 2004).

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MACEDONIA

The mineral industry of The Former Yugoslav Republic of Macedonia (Macedonia) was represented by the mining and processing of metals (mainly nonferrous), a variety of industrial minerals, and mineral fuels, which were limited to the production of lignite. Crude petroleum was imported and processed at the country's sole domestic refinery.

In 2004, Macedonia reported a 5.3% growth in the country's gross domestic product based on purchasing power parity compared with that of 2003 (International Monetary Fund, 2005§). Industrial production, however, declined by about 2%; the gross volume of output of the mining and quarrying sector showed a decline of about 5% compared with that of 2003. The mine output of industrial minerals increased by about 3.6% compared with that of 2003; mine production of most metals (cadmium, copper, lead, and zinc) was well bellow their level of output in 2003. In terms of value, the production of coal, lignite, and peat declined by about 1% (table 7; Republic of Macedonia State Statistical Office, 2005).

In 2004, the production of copper and lead-zinc ore virtually ceased owing to labor disputes, financial considerations, and environmental issues that began in 2003, which forced production stoppages and closures (table 7; Metal Bulletin, 2003). Macedonia's lead and zinc mining and processing operations, which were located in the northeastern part of the country, comprised the Sasa, the Toranica, and the Zletovo Mines. These operations were in bankruptcy proceedings during the year with trustees and privatization advisors assigned by the Government in consultation with the World Bank for Reconstruction and Development. In 2004, the Government undertook the preparation of these facilities for privatization. Total resources at the three mines amounted to about 2 million metric tons (Mt) of contained lead and more than 1.2 Mt of contained zinc (Government of Macedonia, 2004, p. 7-10). The smelting and refining facilities (Imperial process) at MHK Zletovo in Veles, apart from lead-zinc production, also produced such associated metals as cadmium, gold, and silver (Efremov, 2004). In 2004, the MHK Zletovo smelter, which was closed for environmental reasons in 2003, was offered for sale. Operations at Zletovo, however, had not been restarted by yearend (SeeNews, 2004). For similar reasons, no copper production was reported at the Bucim Mine in Radovis in 2004 (table 1). According to the National Bank of the Republic of Macedonia (2005, p. 71-72), imports of nonferrous metals amounted to about $39 million in 2004, which exceeded those in 2003 by more that five times.

Major activities in Macedonia's iron and steel sector included the sale of a majority share of Balkan Steel AD's stock to LNM Holdings N.V. of the United Kingdom. Balkan Steel comprised a 1.2-Mt/yr hot-strip mill and a 1-Mt/yr cold-rolling mill. A major portion of the slabs for the Balkan Steel mills would come from LNM subsidiary Ispat Sidex of Romania (Metal Bulletin, 2004; LNM Holdings N.V., 2004). Steel production was based entirely on scrap-fed EAFs at the Makstil A.D. steel mill in Skopje. In 2004, crude steel output amounted to about 315,000 metric tons, which was an increase of about 8% compared with that of 2003. Steel exports in 2004, which had a value of $405 million, increased by about 60% compared with those of 2003; their share of total exports was about 25%, and the contribution to the total increase in exports by iron and steel exports amounted to about 50%. The increase in exports largely was due to increased global demand for iron and steel products in 2004 with increased prices of nickel and sheet steel, especially in the second half of the year (National Bank of Macedonia, 2005, p. 71-72).

Macedonia continued to produce bentonite, cement, feldspar, gypsum, sand and gravel, stone (carbonate and silicate), and other construction materials mainly for export. In 2004, exports of crude nonmetallic mineral commodities amounted almost $16 million, which exceeded imports by more than double.

Lignite mining and petroleum refining were the only industries in Macedonia's mineral fuels sector. Lignite production in 2004 amounted to about 8.5 Mt. Imports of coal, coke, and coal briquettes in 2004 were valued at about $22.4 million, which was about 6% less than that of the preceding year. Domestic mining supplies about 70% of the fuel for the Bitola coal-fired electric power station, which supplied about 70% of the country's electricity needs. Lignite resources, however, could be exhausted by 2010 at the present rate of production (National Bank of Macedonia, 2005, p. 71-72).

Despite a decline in the output of mine production of nonferrous metals in 2004, the production of copper, lead-zinc, and associated metals should continue and increase in volume owing not only to their availability but also to increasing regional stability and investor confidence. Foreign direct investment (FDI) in the country's mining and quarrying sector in 2004 amounted to almost $5.8 million, which fully overshadowed a total FDI in 2003 of $26,000.

Outlook

Macedonia is slowly recovering from extreme political and social tension, which pervaded the region in the late 1990s and early 2000s and disrupted long established regional markets. The production of all minerals is expected to recover slowly during the next several years.

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SERBIA AND MONTENEGRO

Serbia and Montenegro continued to report overall economic growth in 2004. The Government continued to reduce restrictions on foreign investment in the country's mineral industry. The Government planned to offer a program of new concessions for the exploration and development of boron, copper, and gold deposits in the first half of 2005. The planned copper and gold exploration and development project comprised three sites in eastern Serbia at Crni Vrh, at which commercially valuable associated minerals included cadmium, germanium, lead, rhenium, selenium, and zinc (Reuters, 2005).

In 2004, the gross domestic product based on purchasing power parity amounted to about $40.3 billion, which was an increase of 6.3% compared with that of 2003 (International Monetary Fund, 2005§). The total value of industrial production increased by about 8% compared with that of 2003 owing mainly to the manufacturing sector. Mining and quarrying reported a decrease of about 1%, which was mainly attributed to a 6% decline in the extraction of petroleum and natural gas compared with that of 2003. The value of mine output of industrial minerals and coal increased by 5% and 1%, respectively, compared with output attained in 2003. Mine production of metal ores increased by 1% compared with that of 2003, which was based entirely on the growth of iron ore production (Statistical Office of Serbia and Montenegro, 2005a, p. 34-35; b, p. 7).

Commodity Review

Metals

Aluminum.—In 2004, the production of bauxite and aluminum declined by about 10% and 9%, respectively, compared with those of 2003. In 2003 (the latest year for which trade data were available), total exports of aluminum and aluminum products amounted to 99,114 metric tons (t); this was a decline of 10% compared with exports in 2002. The value of aluminum exports, however, amounted to about $144 million, or about 27% more than that of 2002 (table 9; Statistical Office of Serbia and Montenegro, 2004, p. 184).

The privatization of Kombinat Aluminijuma Podgorica (KAP), which began in 2003 under the Privatization Council of Montenegro (PCM), remained the leading issue in the aluminum sector in 2004. Although the privatization of KAP was not achieved during the year, PCM continued the offer of 66% of the KAP's shares. Norwegian, Russian, Swiss, and U.S. companies remained interested in acquiring controlling shares in KAP (Metal Bulletin, 2004b; Reuters, 2004b).

Copper.—The country's output of copper in ore and concentrate amounted to 24,000 t, which was a decline of 9% compared with that of 2003. This, however, was an improvement over mine output of copper in 2003 when production fell by 28% compared with that of the preceding year. Following a steep decline in refined copper production in 2003 owing to facility expansion and restructuring at the Rudarsko Topionicki Bazen (RTB) Bor copper mining and processing complex, refined copper output in 2004 rebounded to about the production level of 2002 (table 9).

In 2004, the Government announced plans to offer up to one-third of RTB Bor's equity for sale, which included mining, smelting, and refining assets. To make the company attractive to investors, the Government was in the process of drafting new legislation that would cancel a major portion of the company's $510 million debt (Filipovich, 2005).

During the year, exploration for copper and gold was undertaken by Hereward Ventures plc of the United Kingdom at the Tulare porphyry mineralization in southern Serbia, which was estimated to contain 150 million metric tons (Mt) of resource at grades of 0.2% copper and 0.38 grams per metric ton (g/t) gold; higher grade zones reportedly also were under study (Hereward Ventures plc, 2005, p. 9).

Iron and Steel.—In 2004, the combined crude steel production from Serbia and Montenegro's two steel mills increased by about 4.3% compared with that of 2003. U.S. Steel Serbia (USSB) (a subsidiary of the United States Steel Corporation since 2003; formerly Sartid AD) in Serbia and HK Zeljezara Niksic AD in Montenegro had effective steelmaking capacities of about 2.2 Mt and 300,000 t, respectively. The acquisition of Sartid by U.S. Steel in 2003 included the Smederevo integrated steel mill, the Sabac tin mill, and the Kucevo limestone mine.

In 2004, USSB's activity included the modernization of the No. 3 oxygen converter; the company also planned to refurbish the No. 1 blast furnace and the No. 1 oxygen converter. Capital outlays for 2005 were to include the modernization of the second blast furnace and steel production processes. USSB planned to invest up to $150 million on modernization and facility expansion during the 2005 to 2010 period (Metal Bulletin, 2004c; Reuters, 2004c; United States Steel Corporation, 2005, p. 72).

In early 2004, the Agency for Economic Restructuring of Montenegro announced the issuance of a tender for about 58% of the stock shares of Zeljezara Niksic. In midyear, following an extension for bid submissions from prospective buyers, Midland Resource Ltd. of the United Kingdom, which submitted the winning bid, announced the purchase of the controlling interest in Niksic (Metal Bulletin, 2004a; Reuters, 2004a).

Lead and Zinc.—The production of lead-zinc ore and lead and zinc metals continued to be minimal owing to the uncertain status of Rudarsko-Metalursko-Hemijski Kombinat za Olovo I Cink Trepca (Trepca) lead-zinc mining, beneficiation, and smelting complex in the Serbian Province of Kosovo, which remained under a United Nations (UN) protectorate status. Production of refined lead amounted to about 1,500 t; that of zinc appeared to have ceased (table 9).

In 2004, Zorka Obojenini Metali (Zorka), which was Serbia's sole zinc smelter and refinery, remained moribund since the cessation of operations in 2003 owing to financial losses that were connected with civil and regional conflicts from 1991 to 1999. Although Zorka had a rated electrolytic zinc production capacity of 32,000 t/yr, its last effective output was in 2001 when about 13,467 t of zinc was produced (Kukic, 2004).

At yearend 2003, Zorka's management reached a leasing agreement with the Binani Group of India that gave Binani a 3-year lease of the zinc-producing facilities. The plan to reach a yearend production target of 24,000 t of refined zinc, however, was not met reportedly because of a dispute over wages between Binani and Zorka employees. Although the restarting of operations at Zorka was expected by midyear, the plant did not report zinc production for 2004 (Kukic, 2004).

Other developments included the sale of Rudnik Lead and Zinc Mining and Beneficiation Complex in central Serbia. The privatization of Rudnik, which was scheduled for yearend, involved an offering of about 70% of the company's equity that was valued at about $8.4 million (SeeNews, 2004).

Exploration for lead and zinc in 2004 also was conducted by Hereward Ventures in the Radan Mountains. The 93-square-kilometer Ivan Kula permit area incorporated the Banska Reka, the Kostine Livade, the Pecine, and the Zdralevica Kuce mineralization sites. Drill core analysis revealed commercially valuable resources of lead and zinc, and associated gold and silver (Hereward Ventures plc, 2005, p. 10).

Industrial Minerals and Mineral Fuels

Although Serbia and Montenegro produced a broad range of industrial minerals, which included cement, crude magnesite, lime, quartz sand, and sand and gravel, the country was a net importer of industrial minerals. According to preliminary 2004 trade returns, the value of imports of industrial minerals rose by more than 21%; imports during this period exceeded exports by almost sevenfold (Statistical Office of Serbia and Montenegro, 2005a, p. 10).

In the mineral fuels sector, the production of coal rose by about 2%, and that of petroleum declined by about 3% compared with their respective output levels in 2003 (table 9). In 2004, the value of coal imports rose by 27%; imports of petroleum and natural gas increased by almost 40% (Statistical Office of Serbia and Montenegro, 2005a, p. 10). In 2004, Ramco Energy plc of the United Kingdom through its Montenegro subsidiary (Medusa Limited) joined Jugopetrol Kotor of Macedonia and Hellenic Petroleum S.A. of Greece in a venture to share geologic data and exploration work at offshore Prevlaka Blocks 1 and 2. Jugopetrol, Ramco, and Hellenic held a 49%, 40%, and 11% interest, respectively, in the Prevlaka blocks, which covered 4,500 square miles of territory in the Adriatic Sea (Ramco Energy plc, 2004).

SERBIAN PROVINCE OF KOSOVO

The Serbian Province of Kosovo became a United Nations (UN) protectorate in 1999 under the provisions of UN Security Council Resolution 1244, following the Kosovo crisis that year. More recently, the UN Interim Administration Mission in Kosovo (UNMIK) was involved in efforts to restore Kosovo's basic infrastructure, industry, and economy, much of which was damaged or destroyed in the conflict of 1999. To promote the reconstruction and development of Kosovo's minerals sector, UNMIK undertook the drafting of mining legislation and the establishment of an independent commission on mines and minerals. The Province of Kosovo's mineral assets include metals, mineral fuels, and industrial minerals (World Bank for Reconstruction and Development, 2005, p. 3-7).

Commodity Review

Metals

Bauxite and Alumina.—Bauxite deposits and mines are near Gllareva in the eastern part of the Province. Total known resources of bauxite amounted to about 6 Mt, of which the content of aluminum oxide (Al_2O_3) ranged from 45% to 51%; iron oxide (Fe_2O_3), 30% to 38%; and silicon dioxide (SiO_2), 2% to 4%.

Iron Ore.—Kosovo's resources of nickeliferous iron ore and ferronickel producer Ferronikel Kosovo are near Komorane, which is located in the central part of the Province; the nickel- and cobalt-bearing laterite iron ore exceeds 10 Mt and contains about 1.3% nickel and 0.07% cobalt. The ferroalloy plant, which had an installed capacity to produce about 12,000 t/yr of nickel in ferronickel, had been idle since 1999 (World Bank for Reconstruction and Development, 2005, p. 3-7). In 2004, the Kosovo Trust Agency, which was established by UNMIK in 2002 in part to oversee the operations and privatization of energy and mining enterprises, announced plans to prepare laterite iron mines and the ferronickel plant for privatization (Metal Bulletin, 2004b).

Lead and Zinc.—Lead and zinc resources amounted to about 22 Mt; ore grades ranged from 5.1% to 11.7% lead, 3.5% to 16.9% zinc, and 112 grams per metric ton (g/t) to 166 g/t silver. The major lead and zinc deposits were at Stari Trg, Belo Brdo, Novo Brdo, and Ajavalija. The rehabilitation of the Trepca lead and zinc mining, beneficiation, smelting, and refining complex remained a key element for restoring the lead and zinc industry in Kosovo and in Serbia and Montenegro in general. Operations at Trepca in 2004 involved preparations to transition from care and maintenance to a resumption of concentrate production (World Bank for Reconstruction and Development, 2005, p. 3-7).

Industrial Minerals

Kosovo's mineral industry also included such industrial minerals as aggregates, dimension stone, and magnesite. Magnesite deposits and mines are located at Golesh in the central part of the Province and at Strezovce in the eastern part. Total resources amounted to about 5 Mt; magnesium oxide (MgO) ranged from 38% to 46%.

Mineral Fuels

The Bardh and the Mirash Mines, which are located in central Kosovo, were rated with combined resources of more than 18 billion tons of lignite. These mines and the Kosovo A and B thermal electric powerplants were under the operational control of Kosovo Electric Power Corporation (KEK). The KEK-operated mines produced about 6 Mt of lignite, of which almost all was used to fuel the power stations (World Bank for Reconstruction and Development, 2005, p. 3-7).

Outlook

Serbia and Montenegro is slowly recovering from extreme political and social tension, which pervaded the region in the late 1990s and early 2000s and disrupted long-established regional markets. The production of all minerals is expected to recover slowly during the next several years owing to such factors as investor reticence due to a lack of regional stability and uncertainty about Kosovo's future status.

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SLOVENIA

Slovenia continued to rely mostly on imports of most mineral commodities to meet the needs of its economy. Domestic mine production was limited largely to the extraction of coal, natural gas, petroleum, and a variety of industrial minerals. In 2003 (the latest year for which trade data were available), the value of mineral fuel imports exceeded exports by almost sixfold compared with that of 2002. Imports of crude materials other than fuels also exceeded exports in the same category by significant margins; imports of metallic ores, concentrates, and scrap exceeded exports by more than threefold; coal, by more than sixfold. The value of natural gas and petroleum exports was of no significance compared with imports (Statistical Office of the Republic of Slovenia, 2004b, p. 417-430).

In 2004 Slovenia's gross domestic product based of purchasing power parity amounted to $40.8 billion, which was an increase of about 4.2% compared with that of 2003. Total industrial output increased by 4.9% compared with that of 2003. The volume of output of the mining and quarrying sector, however, declined by 1.1%. The aggregated output of the nonmineral fuels-related mining and quarrying sector declined by about 2.5% compared with that of 2003. Aggregated output data on the production of mineral fuels (coal, natural gas, nuclear materials, and petroleum) were classified as confidential (Statistical Office of the Republic of Slovenia, 2004a).

The main components of Slovenia's metallurgical industries included primary aluminum production at Kidriçevo (Talum d.o.o.) and three steel mills [Slovenske Železarne (SŽ), which was a state-owned holding company that maintained ownership of SŽAcroni

Jesenice d.o.o. (Acroni) and SŽ Metal Ravne d.o.o. (Metal Ravne), and Store Steel Ltd. (formerly a subsidiary of the Inexa Group of Sweden since 1999)]. In 2004, Talum's output of primary and secondary aluminum increased by about 10% compared with that of 2003. Talum's management announced plans during the year to expand operations with the addition of new recycling facilities, which would produce about 85,000 metric tons per year (t/yr) of secondary aluminum by 2008 (Slovenia Business Week, 2004a)

In 2004, Slovenia's total output of crude steel rose by about 1% compared with that of 2003; the output of steel semimanufactures rose by about 4.6% (table 11). The increase in production was achieved despite downtime at Acroni in June owing to an electrical fire. Acroni underwent facility expansion during the year to raise crude steel production capacity to 400,000 t/yr from 250,000 t/yr (Metal Bulletin, 2004a). Acroni also planned to install a new 70,000-t/yr recrystallization plant for stainless steel (Metal Bulletin, 2004b). To remain competitive, Metal Ravne announced a restructuring plan that would undertake an evaluation of the company's technology and marketing practices. The restructuring plan also envisaged a 3% a reduction of its workforce to 910 employees (Slovenia Business Week, 2004b).

Slovenia remained import dependent on many industrial minerals. In 2003 (the latest year for which trade data were available), exports of industrial minerals amounted to almost 15% of their aggregate import value (Statistical Office of the Republic of Slovenia, 2004b, p. 419). In the mineral fuels sector, the production of coal (brown and lignite) in 2004 declined slightly compared with that of 2003. In part, this was due to the closure of coal mines in the Trbovlje area (Slovenia Business Week, 2004c).

Outlook

During the past decade, Slovenia's economic transition from a central planning model to an open market system has gradually diminished the role of the mineral industry; higher value industries began playing an increasingly greater role in the country's economy. Raw materials needed by Slovenian industry are at sources that, to a greater extent, are beyond the country's borders.

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TABLE 1
ALBANIA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002	2003	2004
METALS						
Bauxite[e]		5,000	5,000	5,000	5,000	5,000
Chromium:						
Chromite, gross weight		280,000	200,000	215,000	220,000	290,000
Marketable ore and concentrate:						
Marketable ore		117,000	86,000	82,000	85,000	148,392
Concentrate		3,400	--	9,000	10,000	10,000
Total		120,400	86,000	91,000	95,000	158,392
Ferrochromium		12,500	11,900	22,800	37,800	34,650
Iron and steel, metal, crude steel		64,700	94,100	96,600	86,117 [r]	98,026
INDUSTRIAL MINERALS						
Cement, hydraulic	thousand metric tons	180	--	--	578 [r]	573
Clay, kaolin[e]		420	385	350	-- [r]	--
Dolomite[e]		50,000	50,000	50,000	50,000	50,000
Fertilizer, manufactured, olivinite[e]		200	200	200	200	200
Salt		20,000 [e]	25,783	22,746	21,448 [r]	24,783
MINERAL FUELS AND RELATED MATERIALS						
Asphalt and bitumen, natural[3]		16,000	--	4,200	42,076 [r]	61,035
Coal, lignite		20,600	16,400	20,300	18,000 [r]	18,000 [e]
Natural gas, gross production[4]	thousand cubic meters	11,490	10,980	9,150	11,617 [r]	11,965
Petroleum:						
Coke		46,000	45,000 [e]	40,000	57,541 [r]	58,712
Crude, gross weight		314,000	329,370	350,038	359,253 [r]	385,872

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. -- Zero.

[1]Table includes data available through October 2005.

[2]In addition to the commodities listed, a variety of industrial minerals and construction materials (common clay, quartz, sand and gravel, stone, and titanomagnesite) are produced but output is not reported quantitatively, and available information is inadequate to make reliable estimates of output levels.

[3]Includes asphalt and bitumen produced at petroleum refineries.

[4]Separate data on marketable production are not available, but gross and marketed output are regarded as being nearly equal.

TABLE 2
ALBANIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2004[1]

(Thousand metric tons unless otherwise specified)

Commodity		Location of main facilities (all state-owned)	Annual capacity
Cement		Elbasan, 32 kilometers southeast of Tirana; Kruje, 20 kilometers northwest of Tirana; Shkoder, 85 kilometers northwest of Tirana; and Vlore, southwest of Tirana	1,200
Chromite		Bater (including Bater I and II and Martanesh), 40 kilometers northwest of Tirana	450
Do.		Bulquize (including Bulquize south, Fush, Terrnove, and Todo Maco), 35 kilometers northwest of Tirana	450
Do.		Kalimash, 60 kilometers north of Tirana	250
Do.		Kam, 70 kilometers north of Tirana	100
Do.		Klos, 20 kilometers northeast of Tirana	50
Do.		Pogradec (including Katjiel, Memelisht, Pojske, Pishkash, and Prrenjas), 50 kilometers east of Tirana	100
Coal, lignite		Maneze, Mezes, and Valias Mines in Tirana Durres area; Krabe Mine, 20 kilometers southeast of tirana; Alarup and Cervnake Mines, in Pogradec area, 80 kilometers southeast of Tirana; Mborje-Drenove Mine in Korce area, 85 kilometers southwest of Tirana; and Memaliaj Mine in Tepelene area, 110 kilometers south of Tirana	2,500
Copper:			
Ore		Fushe-Arrez, 80 kilometers north of Tirana	350
Do.		Gjejan, 100 kilometers northeast of Tirana	150
Do.		Golaj (including Nikoliq and Pus), 120 kilometers northeast of Tirana	150
Do.		Kurbnesh-Perlat, 55 kilometers northeast of Tirana	100
Do.		Rehove, 110 kilometers southeast of Tirana	100
Do.		Reps (including Gurch, Lajo, Spac, and Thurr), 55 kilometers north of tirana	350
Do.		Rreshen, 50 kilometers north of Tirana	50
Do.		Shkoder (including Palaj, Karma I and II), 85 kilometers northwest of Tirana	100
Smelter		Kukes, 110 kilometers northeast of Tirana	6
Do.		Lac, 35 kilometers northwest of Tirana	7
Do.		Rubik, 50 kilometers north of Tirana	4
Ferrochromium		Burrel, 35 kilometers northeast of Tirana	40
Do.		Elbasan, 32 kilometers southeast of Tirana	36
Iron ore		Prrenjas (Bushtrica, Prrenjas, Skorska I and II), 70 kilometers southeast of Tirana	650
Do.		Guri i Kuq (including Cervenake, Grasishta, Guri i Kuq, Hudenisht and Guri Pergjrgjur), 25 kilometers east of Tirana	500
Natural gas	million cubic feet	Gasfields on southwest Albania between Ballsh and Fier	16,000
Nickel, smelter		Elbasan	6
Petroleum:			
Crude	42-gallon barrels per day	Oilfields at Marineze, Ballsh, Shqisht, Patos, Kucova, Gorrisht, and others	35,000
Refined	do.	Refineries at Ballsh, Cerrik, Fier, and Stalin	33,000
Steel		Steel of the Party Metallurgical Combine at Elbasan	150

[1]A substantial portion of these enterprises have been operating significantly below capacity during the transition to a market economy; the capacities provided in this table represent only the latest available information and may not show the true status of these enterprises.

TABLE 3
BOSNIA AND HERZEGOVINA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002	2003	2004
METALS						
Aluminum:						
Bauxite		254,664 r	90,027 r	71,312 r	573,000 r	480,000
Alumina, metallurgical grade		208,435	30,928	--	35,011	30,000 e
Metal, ingot, primary and seconday		94,751 r	95,064 r	102,271 r	112,503 r	121,294
Iron and steel:						
Ore:						
Gross weight		363,351 r	264,540 r	212,114 r	126,929 r	130,000 e
Fe content		182,000 r	132,000 r	106,000 r	63,000 r	64,000 e
Metal:						
Ferroalloys, electric furnace:						
Ferrosilicon		1,000 r	1,000 r	1,000 r	1,000 r	1,000
Silicon metal		200	200	200	--	--
Total		1,200	1,200	1,200	1,000	1,000
Pig iron[e]		57,000	60,000	60,000	60,000	60,000
Crude steel		134,341 r	138,685 r	115,222 r	166,368 r	117,170
Semimanufactures[e]		16,000	160,000	150,000	150,000	120,000
Lead:						
Concentrate, gross weight		1,137	3,271	--	--	--
Metal, smelter, primary and secondary[e]		100	100	100	100	100
Manganese ore:[e]						
Gross weight		2,000	2,000	2,000	2,000	2,000
Mn content		500	500	500	500	500
Zinc concentrate, gross weight		2,274	3,432	--	--	--
INDUSTRIAL MINERALS						
Asbestos, all kinds[e]		500	500	500	500	500
Barite concentrate[e]		2,000	2,000	2,000	2,000	2,000
Cement		628,214 r	703,843 r	912,611 r	890,179 r	1,044,944
Clays:						
Bentonite		5 r, e	5 r, e	9,829 r	13,050 r	16,500 e
Ceramic clay, crude		57,028 r	40,097 r	4,340 r	35,861 r	30,000 e
Fire clay, crude		15	34	10	--	--
Kaolin:						
Crude		-- r	13,000 r	6,500 r	-- r	-- e
Calcined		-- r	5,000 r	3,000 r	-- r	-- e
Gypsum:						
Crude		26,826 r	76,100 r	44,200 r	63,050 r	75,000 e
Calcined		6,605 r	6,052 r	6,504 r	6,042 r	6,000 e
Lime		109,650 r	88,839 r	58,316 r	72,765 r	81,000 e
Magnesite, crude[e]		2,000	2,000	2,000	2,000	2,000
Nitrogen, N content of ammonia[e]		500	500	500	500	500
Quartz, quartzite, glass sand[e]		50,000	50,000	50,000	50,000	50,000
Salt, all sources		93,000 r	90,000 r	98,000 r	84,000 r	85,000
Sand and gravel, excluding glass sand	thousand cubic meters	400 r	348 r	362 r	476 r	450
Sodium compounds:						
Soda ash		49,495 r	36,882 r	-- r	11,804 r	11,000 e
Caustic soda[e]		5,000	5,000	5,000	5,000	5,000
Sodium bicarbonate[e]		500	500	500	500	500
Stone, excluding quartz and quartzite, dimension, crude:						
Ornamental	square meters	23,800 r	41,700 r	35,900 r	35,800 r	35,000 e
Crushed and brown, n.e.s.	thousand cubic meters	277 r	231 r	321 r	153 r	150
Other	cubic meters	-- r	10,540 r	11 r	-- r	--
Sulfur, byproduct of metallurgy		1,000	1,000	-- r	-- r	--
MINERAL FUELS AND RELATED MATERIALS						
Brown coal and lignite	thousand metric tons	7,441 r	7,579 r	7,799 r	9,006 r	9,000 e
Petroleum refinery products:						
As reported	gravimetric tons	608,000	326,000	291,000	72,000	110,000
Converted[e]	42-gallon barrels	4,460,000 r	2,390,000 r	2,140,000 r	528,000 r	807,000

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. -- Zero.

[1]Table includes data available through October 2005.

[2]In addition to the commodities listed, common clay was also produced, but available information is inadequate to make reliable estimates of output.

TABLE 4
BOSNIA AND HERZEGOVINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Alumina		Energoinvest	Plants at Birac-Zvornik	600
Do.		do.	Plant at Mostar	280
Aluminum		Aluminij d.d. Mostar	Smelter at Mostar	92
Bauxite		Energoinvest	Mines at Vlasenica, Jajce, Bosanska Krupa, Posusje, Listica, Citluk, and other locations.	2,000
Cement		Tvornica Cementa Kakanj d.d.	Plant at Kakanj	650
Do.		D.D. Fabrica Cementa Lukavac	Plant in Lukavac	340
Coal:				
Brown		SOUR Titovi Rudnici Uglja, Tuzla	Mines in BiH	12,000
Lignite		do.	do.	7,000
Ferroalloys		Elktrobosna, Elektrohemijska i Eletrotermijska Industrija	Plant at Jajce	80
Iron ore		Rudarsko Metalurski Kombinat Zenica	Mines at Vares, Ljubija, and Radovan	5,000
Lead-zinc ore		Energoinvest	Mine and mill at Srebrenica	300
Manganese ore		Mangan-Energoinvest	Mine and concentrator at Buzim	100
Petroleum, refined	thousand 42-gallon barrels per day	Energoinvest: Rafinerija Nafte Bosanski Brod	Refinery at Bosanski Brod	100
Pig iron		B-H Steel-Zeljezara Ltd. (Kuwait Consulting and Investment, 50%, and Zeljezara Zenica Ltd., 50%)	Blast furnace at Zenica	2,250
Salt, rock	cubic meters per year	Hemijski Kombinat "Sodaso," Rudnik Soli i Solni Bunari	Mines at Tusanj	120,000
Do.	do.	do.	Production from brine at Tuzla, BiH	2,000,000
Steel, crude		B-H Steel-Zeljezara Ltd. (Kuwait Consulting and Investment, 41%, LNM Holdings N.V., 51%; Government, 8%)	Plant at Zenica	2,060

TABLE 5
CROATIA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002	2003	2004
METALS						
Aluminum:						
Bauxite[e]		--	-- [r]	-- [r]	-- [r]	--
Metal, ingot, primary and secondary		15,050	16,019	1,000 [r]	1,200 [r]	5,500
Alloys		977	823	812	1,180 [r]	1,100 [e]
Semimanufactures, rolled		30,161	34,106	33,774	38,114 [r]	35,000 [e]
Iron and steel, metal:						
Ferrochromium		15,753	361	--	--	--
Steel:						
Crude, from electric furnaces		71,021	57,993	33,851	43,380	45,000 [e]
Semimanufactures:						
Bars and wire rods		42,388	31,583	2,078	17,459 [r]	17,000 [e]
Seamless tubes		36,432	35,297	23,435	25,728 [r]	25,000 [e]
Welded pipe		26,405	39,935	37,509	67,501 [r]	50,000 [e]
INDUSTRIAL MINERALS						
Cement	thousand metric tons	2,852	3,246	3,378	3,654	3,811
Clays:						
Bentonite		10,013	10,580	12,102	13,568	16,000
Ceramic clay		6,100	6,000 [e]	150,000 [r]	188,000 [r]	637,000
Gypsum:						
Crude		150,765	130,861	145,000	166,000	148,000
Calcined		1,176	1,217	1,200	1,400 [e]	1,200 [e]
Lime	thousand metric tons	220	253	269 [r]	251	250
Nitrogen, N content of ammonia	do.	395 [r]	316 [r]	289 [r]	322 [r]	404
Pumice and related materials, volcanic tuff	do.	38	42	41	29	23
Salt, all sources		33,668	32,585	36,885	31,281	23,000
Sand and gravel, excluding glass sand	thousand cubic meters	3,480	3,500 [e]	4,650	4,878	3,700
Silica:						
Quartz, quartzite, glass sand		211,705	252,013	275,121 [r]	237,141 [r]	128,000
Glass:						
Flat glass	thousand square meters	302	305	390	495	400 [e]
Container glass		127,758	140,570	148,612	171,070	150,000 [e]
Other hollow glass		1,936	1,631	1,711	1,466	1,400 [e]
Stone, excluding quartz and quartzite, dimension, crude:						
Ornamental	square meters	1,063,901	1,044,944	1,127,948	1,093,573 [r]	1,000,000 [e]
Crushed and brown, n.e.s.	thousand cubic meters	10,801	12,941	14,736	19,022 [r]	19,000 [e]
Other[e]	cubic meters	25,000	25,000	25,000	25,000	20,000
Sulfur, byproduct of metallurgy		15,000 [e]	15,000 [e]	7,069	7,471	7,500 [e]
MINERAL FUELS AND RELATED MATERIALS						
Carbon black		20,029	21,180	19,386	21,497	21,000 [e]
Natural gas, gross production	thousand cubic meters	1,659	2,010	2,122	2,190	2,201
Petroleum:						
As reported	thousand metric tons	1,214	1,121	1,100	1,052	1,005
Refinery products		5,322,000	5,400,000	4,513,338	4,742,012	4,500,000 [e]

[e]Estimated; estimated data are rounded to no more than three significant digits. [r]Revised. -- Zero.

[1]Table includes data available through October 2005.

[2]In addition to the commodities listed, common clay was also produced, but available information is inadequate to make reliable estimates of output.

TABLE 6
CROATIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Alumina		Jadral, Jadranski Aluminijum	Jadral Alumina Plant	150
Aluminum		Boris Kidric Tvornica Lakih Metala	Smelter at Sibenik	75
Do.		Top-Tvornica Olovni i Aluminjskikh	Semimanufactures producer at Savska	NA
Cement		Dalmacija Cement	Sv. Jurai plant at Kastel Sucurac	1,300
Do.		do.	Sv. Kajo plant at Solin	750
Do.		do.	Majdan plant at Solin Majdan	780
Do.		Istra Cement International D.D.	Plant at Pula	70
Do.		Tvornica Cementa Koromacno	Plant at Koromacno	420
Do.		Tvornica Cementa Umag D.D.	Cement plant at Umag	480
Do.		Nasicecement D.D.	Nacise plant at Tajnovac	840
Coal, bituminous		Istarski Ugljenokopi Rasa	Mines at Labin and Potpican	500
Natural gas	million cubic feet	Industrija Nafte d.d. Zagreb (INA)	Main natural gasfields at Bogsic Lug and Molve	70,000
Petroleum, crude	thousand 42-gallon barrels per day	do.	Oilfields in Croatia and Slovenia (Benicanci, Zutica, Struzec, Ivanic Grad, Lendava, and others locations)	70
Do.	do.	do.	Refineries at Urinj and Rijeka	160
Do.	do.	do.	Refinery at Sisak	150
Pig iron		Metalurski Kombinat Zeljezara Sisak	2 blast furnaces at Sisak	235
Salt	cubic meters	Solana Pag, Solana Ante Festin	Marine salt: Pag Island	13
Steel, crude		SP MK Zeljezare Sisak d.d.	Plant at Sisak	75
Do.		Jadranska Zelejzara Split	Plant at Split	170

NA Not available.

TABLE 7
MACEDONIA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES[1, 2]

(Metric tons unless otherwise specified)

Commodity[3]		2000	2001	2002	2003	2004
METALS						
Aluminum, metal, ingot, secondary		4,500	4,000	4,000	4,000	3,000
Cadmium, smelter output	kilograms	335 [4]	73 [4]	111 [4]	75 [4]	-- [4]
Copper, mine and concentrate output:						
Ore, gross weight	thousand metric tons	2,000	1,500	1,200	1,200	--
Concentrate:						
Gross weight		5,000	25,000	15,000	15,000	--
Cu content		6,000	9,000	5,600	2,567 [r, 4]	--
Gold	kilograms	750	500	500	400	--
Iron and steel:						
Iron ore:						
Gross weight		15,000 [r]	15,000 [r]	15,000 [r]	15,000 [r]	15,000
Fe content		9,000 [r]	9,000 [r]	9,000 [r]	9,000 [r]	9,000
Concentrate		15,000	10,000	10,000	10,000	10,000
Pellets		10,000	10,000	10,000	10,000	10,000
Agglomerate		5,000	5,000	5,000	5,000	5,000
Metal:						
Ferroalloys:						
Ferronickel (38% Ni), gross weight		--	10,300	17,000	19,000 [r]	18,800
Ferrosilicon		50,000 [r]	50,000 [r]	50,000 [r]	50,000 [r]	50,000
Total		50,000 [r]	60,300 [r]	67,000 [r]	69,000 [r]	68,800
Steel, crude		161,000 [4]	217,758 [4]	244,601 [4]	291,354 [4]	315,000
Semimanufactures, hot rolled plate		244,044 [4]	296,279 [4]	261,886 [4]	305,111 [4]	637,000
Lead:						
Mine output:						
Ore, gross weight (Pb-Zn ore)		850,000	600,000	200,000	40,000	-- [4]
Pb content		24,000	20,000	15,000 [4]	5,000 [r, 4]	-- [4]
Primary and secondary:						
Smelter		20,000	8,000	3,500	3,500	-- [4]
Refined		22,900	19,700	19,800	8,000 [r, 4]	-- [4]
Nickel, mine output, Ni content of ferronickel		-- [4]	3,100 [4]	5,149 [4]	5,629 [4]	5,300 [4]
Silver	kilograms	20,000	15,000	12,000	10,000	--
Zinc:						
Mine output, Zn content of concentrate		25,000	20,000	10,000 [4]	4,000 [4]	-- [4]
Metal, refined, primary and secondary		62,800 [4]	52,000 [4]	38,000 [4]	15,100 [4]	-- [4]
INDUSTRIAL MINERALS						
Cement	thousand metric tons	585 [4]	630 [4]	600	768 [4]	820 [4]
Clays, bentonite		30,000	25,000	25,000	25,000	25,000
Diatomite		5,000	5,000	5,000	5,000	5,000
Feldspar		10,057 [4]	20,449 [4]	21,000	21,000	21,000
Gypsum:						
Crude		25,000	20,000	20,000	20,000	20,000
Calcined		5,000	3,000	3,000	3,000	3,000
Lime		1,000	500	500	500	500
Pumice and related materials, volcanic tuff		150,000	50,000	50,000	50,000	50,000
Sand and gravel, excluding glass sand	thousand cubic meters	150	100	100	100	100
Stone, excluding quartz and quartzite, dimension, crude:						
Ornamental	square meters	200,000	150,000	150,000	150,000	150,000
Crushed and brown, n.e.s.	thousand cubic meters	400	300	300	300	300
Other	cubic meters	10,000	5,000	5,000	5,000	5,000
Sulfur, byproduct of metallurgy		26,000	26,000	25,000	25,000	25,000
Talc:						
Crude		800	800	800	800	800
Washed		562 [4]	557 [4]	550	550	550
MINERAL FUELS AND RELATED MATERIALS						
Brown coal and lignite	thousand metric tons	7,516 [4]	8,106 [4]	8,640 [4]	8,360 [4]	8,500 [4]
Petroleum refinery products	thousand 42-gallon barrels	6,000	6,000	6,000	6,000	5,000

[P]Preliminary. [r]Revised. -- Zero.

[1]Table includes data available through October 2005.

[2]Estimated data are rounded to no more than three significant digits; may not add to totals shown.

[3]In addition to the commodities listed, common clay was also produced, but available information was inadequate to make reliable estimates of output.

[4]Reported figure.

TABLE 8
MACEDONIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity[e]
Cement	Azbestcementa "Usje" Preduzece za Proizvodnju Cementa	Plant at Skopje	2,190
Chromite, concentrate	Jugohrom, Hemijsko-Elektrometakurski Kombinat (HEK)	Concentrator at Radusa	150
Copper ore	Bucim, Rabotna Organizacija za Rudarstvo i Metalurgija za Baker	Mine and mill at Bucim, near Radovis	4,000
Ferroalloys	Jugohrom, Hemijsko-Elektrometalurski Kombinat (HEK)-Jegunovce	Plant at Jegunovce	80
Iron ore	Skopje, Rudnici i Zeljezarnica Skopje	Mines at Tajmiste, Demir Hisar, and Damjan	1,000
Lead metal	Zletovo, Topilnica za Cink i Olovo	Imperial smelter at Titov Veles	40
Do.	do.	Refinery at Titov Veles	40
Lead-zinc, concentrate	Sasa–Makedonska Kamenica Mine (Sase, Rudnici za Olovo i Cink)	Mill near Kamenica	65
Lead-zinc ore	Prepobotuvacki, Kombinat Zletovo-Sasa—Sase, Rudnici za Olovo i Cink	Mine near Kamenica	300
Do.	Zletovo, Rudnici za Olovo i Cink	Mine and mill near Probistip	700
Nickel:[1]			
Ore	Feni Industries	Mine and opencast mine near Kavadarci	2,300
Metal	do.	Ferronickel plant at Kavadarci	7
Steel, crude	Makstil A.D. Skopje (Duferco Group, 54.4%)	Plant at Skopje	260
Zinc metal	Zletovo, Topilnica za Cink i Olovo	Imperial Smelter plant and refinery at Titov Veles	65

[e]Estimated; estimated data are rounded to no more than three significant digits.
[1]Nickel in ferronickel.

TABLE 9
SERBIA AND MONTENEGRO: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002	2003	2004
METALS						
Aluminum:						
Gross weight:						
Alumina, calcined		186,135	200,660	237,396	239,739 r	220,000 e
Bauxite		630,000	610,000	612,000	540,000 r	486,000
Metal, ingot, primary and secondary		88,151	100,176	111,689	116,744 r	107,000
Copper:						
Mine and concentrate output:						
Ore:						
Gross weight	thousand metric tons	12,896	7,123	7,968	5,710 r	5,200
Cu content		58,000	33,000	38,000	28,000	25,000
Concentrate:						
Gross weight[e]		200,000	150,000	185,000	102,000 r, 3	95,000
Cu content		56,100	31,000	36,900	26,400	24,000
Metal, primary:						
Blister and anodes:						
Primary		33,800	24,000	30,000	10,000 r	17,000
Remelted[e]		45,000	35,000	30,000	3,600 r, 3	3,400
Total		78,800	59,000	60,000	13,600 r	20,400
Refined:						
Primary		31,432	22,465	26,897	9,000 r	12,000
Remelted[e]		14,200	10,000	9,000	5,029 r, 3	25,000
Total		45,632	32,465	35,897	14,029 r	37,000
Gold, mine output, Au content	kilograms	1,121	-- r	858 r	363 r	400
Iron and steel, metal:						
Ore and concentrate, agglomerate		1,115	--	--	--	--
Metal:						
Pig iron		563,000	461,000	485,000	635,000 r	655,000
Crude steel		682,000	598,000	596,000	722,000 r	753,000
Semimanufactures		880,000	801,000	877,000	926,000 r	950,000 e
Lead:						
Mine and concentrator output:						
Ore:						
Gross weight (Pb-Zn ore)		733,000 r	531,000 r	284,000 r	183,000 r	180,000
Pb content[e]		22,000 r	5,800 r	3,100 r	2,000 r	2,000
Concentrate:[e]						
Gross weight		38,000	16,000 r	8,500 r	5,500 r	5,500
Pb content		10,500	5,200 r	2,800 r	1,800 r	1,500 3
Metal:						
Refined, primary		1,242	--	200 r	500	800
Smelter, primary and secondary		1,500	--	--	--	--
Magnesium, metal		1,270	1,500	1,800 e	1,500 e	1,500 e
Platinum-group metals:						
Palladium	kilograms	21 e	10	10 e	8 e	8
Platinum	do.	3 e	1	1 e	1 e	1
Selenium	do.	21,000	14,000	15,000 e	7,000 r	7,000 e
Silver, mine output, Ag content	do.	9,068	5,745	6,838	2,028 r	2,000 e
Zinc:						
Zn content:						
Pb-Zn ore[e]		21,000	15,000	9,300	7,500 r	--
Concentrate		3,266	5,988	6,900	5,400 e	--
Concentrator output, gross weight[e]		9,500	17,500	20,300	5,000 r	--
Refined		8,291	13,467	1,478	62 r	--

See footnotes at end of table.

TABLE 9–Continued
SERBIA AND MONTENEGRO: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002	2003	2004
INDUSTRIAL MINERALS						
Asbestos, all kinds		563	194	372	111 r	110 e
Cement	thousand metric tons	2,117	2,418	2,396	2,075	2,240
Clays:						
Bentonite[e]		75	75	75	75	75
Ceramic clay[e]		30,000	30,000	30,000	25,000 r	25,000
Fire clay:[e]						
Crude		30,000	30,000	30,000	30,000	30,000
Calcined		10,000 [3]	10,000	10,000	10,000 r	10,000
Kaolin, crude		39,475	60,900	95,622 r	99,460 r	95,000 e
Feldspar, crude		4,254	4,451	7,813 r	3,045 r	3,500 e
Gypsum, crude		46,651	58,045	54,937	42,261 r	45,000 e
Lime	thousand metric tons	499	467	468	402 r	435 e
Magnesite:						
Crude		41	36	33	24 r	20
Caustic calcined[e]		3,000	2,500	2,500	2,000	1,500
Mica, all grades		1,727 r	303 r	426 r	185 r	200 e
Nitrogen, N content of ammonia		60,000 e	65,800 r	115,300	61,600	136,100
Pumice and related materials, volcanic tuff[e]		120,000	100,000	100,000	100,000	100,000
Salt, all sources		78,277	61,646	42,243	78,271 r	75,000 e
Sand and gravel, excluding glass sand	thousand cubic meters	2,675	1,967	2,074	1,507 r	1,500 e
Silica:						
Quartz sand		418,060	301,402	258,801	260,880 r	260,000 e
Glass		106,000	106,000	104,000	65,000 r	80,000
Sodium compounds:						
Caustic soda		7,415	7,584	6,787	7,450 r	7,000 e
Sodium sulfate[e]		800	800	800	800	800
Stone, excluding quartz and quartzite, dimension, crude:						
Ornamental	square meters	158,000	84,000	103,000 r	69,000 r	70,000 e
Crushed and brown, n.e.s.[e]	thousand cubic meters	3,000	3,000	3,000	2,000 r	2,000
Other, stone block[e]	cubic meters	1,000	1,000	1,000	500 r	500
Sulfur, byproduct:[e]						
Metallurgy	thousand metric tons	100	100	75	40 r	50
Petroleum	do.	1	1	1	1	1
Total	do.	101	101	76	41 r	51
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Bituminous	thousand metric tons	88	70	70	54 r	50
Brown	do.	398	376	423	377 r	450
Lignite	do.	31,789	32,936	32,995	34,543 r	35,192
Total	do.	32,275	33,382	33,488	34,974 r	35,692
Natural gas, gross production	million cubic meters	729 r	506 r	400 r	364 r	300 e
Petroleum:						
Crude, as reported	thousand metric tons	805	746	682	671 r	652
Refinery products	do.	1,052	1,793	2,369	2,380 r	2,300 e

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. -- Zero.

[1]Table includes data available through October 2005.

[2]In addition to the commodities listed, common clay and diatomite are also produced and tellurium may be recovered as a copper refinery byproduct, but available information is inadequate to make reliable estimates of output levels.

[3]Reported figure.

TABLE 10
SERBIA AND MONTENEGRO: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand of metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Alumina	Kombinat Aluminijuma Titograd	Plant at Titograd, Montenegro	200.
Aluminum	do.	Smelter at Titograd, Montenegro	100.
Antimony, ores and concentrates	Zajaca, Rudarsko Tapionicarski Bazen	Mines and mills near Zajaca, Serbia	80.
Do.	do.	Mines and mill at Rajiceva Gora, Serbia	300.
Antimony, metal	do.	Smelter at Zajaca, Serbia	4.
Bauxite	Rudnici Boksita, Niksic	Mines in Montenegro at Kutsko Brdo, Zagrad, Biocki Stan, Durakov Dol, and other locations	650.
Cement	Becinska Fabrika Cementa	Plant at Beocin, Serbia	2,031.
Do.	Fabrika Cementa Novi Popovac	Plant at Popovac, Serbia	1,613.
Coal:			
Bituminous	Ibarski Rudnici Kamenog Uglja	Mines at Jarando and Usce, near Baljevac na Ibru, Serbia	250.
Lignite	SOUR Kolubara, Rudarsko Energetsko Industrijski Kombinat, RO	Opencast mines: Polje B and Polje D	10,000.
Do.	Kolubara Povrsinski Kopovi	Tamnavski Kopovi (also known as Kolubarski Rudnici Lignita), near Vreoci, Serbia	14,000.
Do.	SOUR Elektroprivreda Kosova, RO Kosovo, Proizvodnja Separacija i Transport Uglja	Opencast mines: Dobro Selo and Belacevac, near Obilic, Serbia	2,000.
Copper	Rudarsko Topionicki Bazen Bor	Smelter at Bor, Serbia	180.
Do.	do.	Electrolytic refinery at Bor, Serbia	180.
Do.	do.	Mine and mill at Bor, Serbia	5,000 ore.
Do.	do.	Mine and mill at Majdanpek, Serbia	15,000 ore.
Do.	do.	Mine and mill at Veliki Krivelj, Serbia	8,000 ore.
Lead, metal	Rudarsko Metalursko Hemijski Kombinat za Olovo i Cink Trepca	Smelter at Zvecan, Serbia	180.
Do.	do.	Refinery at Zvecan, Serbia	90.
Lead-zinc ore	Rudarsko-Metalursko-Hemijski Kombinat za Olovo i Cink Trepca	Mines at Ajvalija, Kopanaonik, Badovac; Trepca, Blagodat, Lece; Veliki Majdan, Tisovak; and Kisnica, Rudnik, Suplja Stijena	5,000.
Do.	do.	Mills at Kriva Feja, Lece, Rudnik, Badovac, Leposavic, Zvecan, and Maravce, Suplja Stijena	3,160.
Do.	Hemijska Industrija Zorka: Brskovo, Rudnici Olova i Cinka	Mine at Brskovo, Montenegro	500.
Do.	Veliki Majdan Rudnik Olova i Cinka	Mine at mill near Krupanj, Serbia	250.
Magnesite, concentrate	Rudnici Magnezita "Sumadija"	Mine and plant at Sumadija, 20 kilometers northwest of Cacak, Serbia	120.
Do.	Rudnik i Industrija Magnezita "Strezovce"	Opencast mine at Beli Kamen, Strezovce, near Itiova Metrovica, Serbia	300.
Do.	do.	Sinter plant at Strezovce	40.
Do.	Magnohrom, Rudnik Magnezita "Magnezit"	Mine at Bela Stena, Baljevac na Ibru, Serbia	30.
Natural gas million cubic feet	Naftaplin (Naftagas), RO za Istrazivanje, i Prozvodnju Nafte i Gasa	Natural gasfields in Serbia: Kinkinda and others	30,000.
Petroleum:			
Crude thousand 42-gallon barrels per day	Naftagas, Naftna Industrija:	Oilfields in Serbia: Kikinda and others	30.
Refined do.	Rafinerija Nafte Pancevo	Refinery at Pancevo, Serbia	110.
Do. do.	Rafinerija Nafte Novi Sad	Refinery at Novi Sad, Serbia	28.
Pig iron	U.S. Steel Serbia	Blast furnace at Smederevo, Serbia	720.
Steel, crude	do.	Plant at Smederevo, Serbia	2,200.
Do.	HK Zeljezara Niksic AD	Plant at Nicsic, Montenegro	300.
Zinc metal	Rudarsko Metalursko Hemijski Kombinat Olova i Cinka Trepca, Metalurgija Cinka	Electrolytic plant at Titova Metrovica, Serbia	40.
Do.	Hemijska Industrija Zorka	Electrolytic plant at Sabac, Serbia	40.

TABLE 11
SLOVENIA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002	2003[e]	2004
METALS						
Aluminum, metal, ingot, primary and secondary		83,800	76,632	87,600	109,800 [3]	120,666
Iron and steel, metal:						
Ferroalloys:						
Ferrosilicocalcium[e]		200	100	100	--	--
Ferrosilicon[e]		9,000	9,000	9,000	9,000	9,000
Steel, crude, from electric furnaces		519,000	462,000	481,000	543,000 [3]	548,000
Semimanufactures		466,000	450,000	400,000	594,000	621,000
Lead, metal, refined, secondary		15,300	15,400	15,400	15,400 [r]	16,000
INDUSTRIAL MINERALS						
Cement	thousand metric tons	1,300	1,300	1,250	1,300	1,300 [e]
Clays:[e]						
Bentonite		4,657	3,738	4,122	4,000	4,000 [e]
Ceramic clay, crude		2,500	2,500	2,000	2,261 [r, 3]	1,819
Kaolin		-- [r]	-- [r]	-- [r]	-- [r]	--
Lime	thousand metric tons	150 [e]	1,434	1,636	1,500 [r, 3]	1,500 [e]
Pumice and related materials, volcanic tuff[e]		40,000	40,000	40,000	40,000	40,000
Quartz, quartzite, glass sand[e]		210,000	200,000	200,000	200,000	200,000
Salt, all sources		98,702	107,755	128,212	125,000	125,000 [e]
Sand and gravel, excluding glass sand	thousand metric tons	12,526	11,510	10,897	11,000	11,000 [e]
Stone, excluding quartz and quartzite, crude:						
Dimension		78,000 [e]	45,000 [e]	6,858 [3]	12,603 [3]	8,634
Other[e]	cubic meters	10,000 [r]	10,000 [r]	10,000 [r]	10,000 [r]	10,000
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Brown	thousand metric tons	737	685	639	608 [3]	611
Lignite	do.	3,743	3,448	3,400	4,222 [3]	4,198
Natural gas, gross production	thousand cubic meters	6,800	6,100	6,000	4,900 [3]	4,500 [e]
Petroleum, crude	thousand metric tons	600 [e]	700 [e]	763	482 [3]	344

[e]Estimated; estimated data are rounded to no more than three significant digits. [r]Revised. -- Zero.
[1]Table includes data available through October 2005.
[2]In addition to the commodities listed, common clay was also produced, but available information is inadequate to make reliable estimates of output.
[3]Reported figure.

TABLE 12
SLOVENIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Alumina	Talum d.o.o.	Plant at Kidricevo	120
Aluminum	do.	Smelter at Kidricevo	72
Cement	Salonit Anhovo	Plant at Anhovo	1,120
Coal:			
Brown	SOZC, Rudarsko Energetski Kombinat E. Kardelj	Mines: Sasavski Rudnici at Trbovlje, Hrastnik, Ojstro, Senovo, and Kanizarnica	1,300
Lignite	Rudarsko Energetski Kombinat Velenje, RO Rudnik Lignita-Velenje	Mine at Velenje	5,000
Lead metal	Rudnik Svinca in Topilnica, Mezica	Smelter at Mezica	35
Do.	do.	Refinery at Mezica	30
Petroleum, refined	Industrija Nafte (INA) Rafinerija Nafte Lendava	Refinery at Lendava	16
Pig iron	Zdruzeno Podjetje Slovenske Zelezarne	Two blast furnaces at Zelazara Jesenice	300
Do.	Zelezara Store	Electric reduction furnaces at Store pri Celju	290
Steel, crude	Slovenske Zelezarne	Plant at Jesenica	400
Do.	do.	Plant at Ravne	162
Do.	do.	Plant at Store	140